

(12) UK Patent Application (19) GB (11) 2 090 398 A

- (21) Application No 8115556
- (22) Date of filing 20 May 1981
- (30) Priority data
- (31) 254980U
- (32) 11 Dec 1980
- (33) Spain (ES)
- (43) Application published 7 Jul 1982
- (51) INT CL³
F24C 15/08 3/00
- (52) Domestic classification
F4W 46A
- (56) Documents cited
GB 2044442A
GB 1584267
- (58) Field of search
F4W
- (71) Applicants
Orbalceta, S.A.,
Apartado 68,
Pamplona,
Spain.
- (72) Inventors
Bonifacio Echavarri Ros
- (74) Agents
Marks & Clerk,
57/60, Lincoln's Inn Fields,
London, WC2A 3LS.

(54) Domestic gas heater

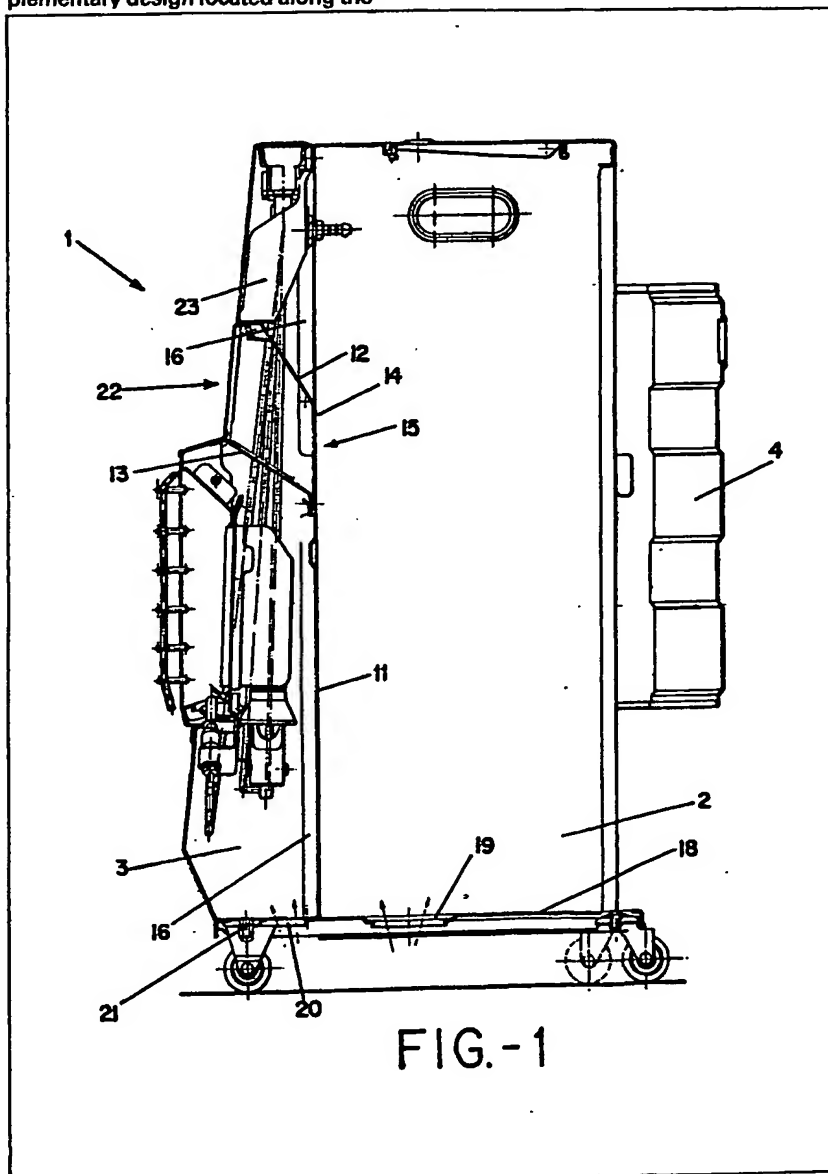
(57) A domestic gas heater (1) comprises a cabinet provided with castors and adapted to carry a fuel gas bottle. The cabinet comprises two body components, one (3) containing the fuel burners, control devices and a separating screen (11) and the other (2) adapted to carry the fuel bottle.

The body components (2,3) each have coupling formations of complementary design located along the

edges to be joined. The coupling formations are formed in the body components thus avoiding the provision of separate fastening elements. The formations are such that both a horizontal and a vertical fastening is provided between the bodies and in particular several of the formations are of the hook and eye type.

The body components (2,3) are pro-

(57) continued overleaf...



GB 2 090 398 A

vided with a number of strategically positioned apertures (15,19,20) to aid air circulation, in particular to improve the air supply to the burners and also to improve cooling of the space occupied by the gas bottle. This latter space being separated from the burners by the separating screen (11).

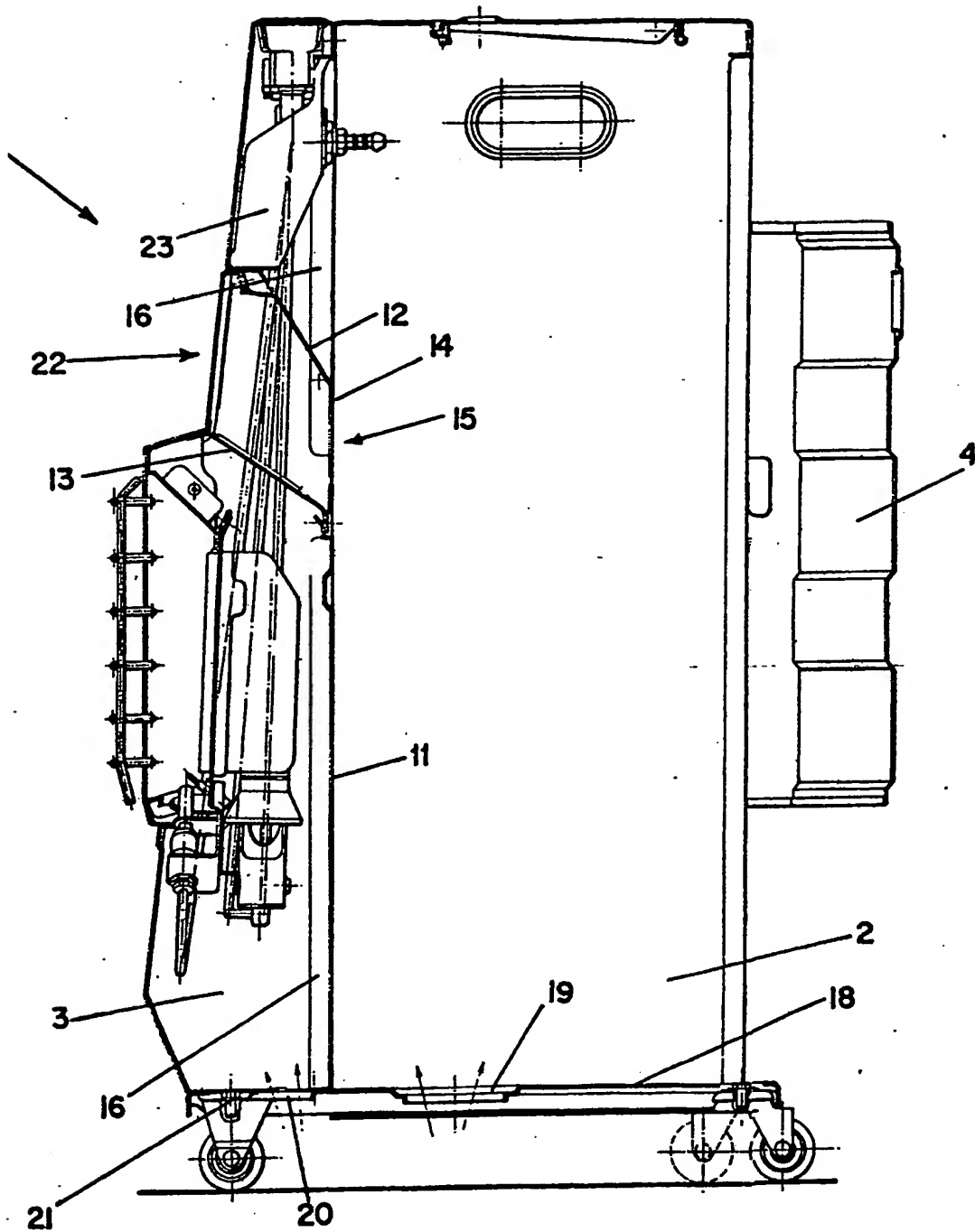
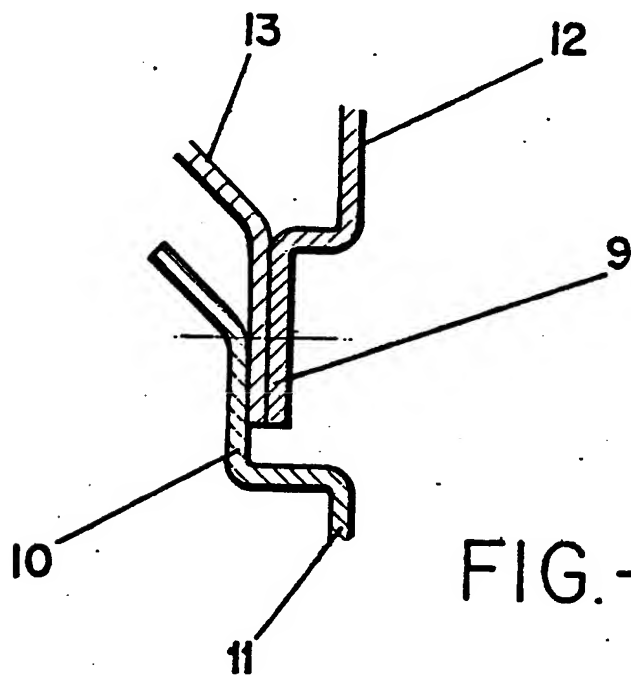
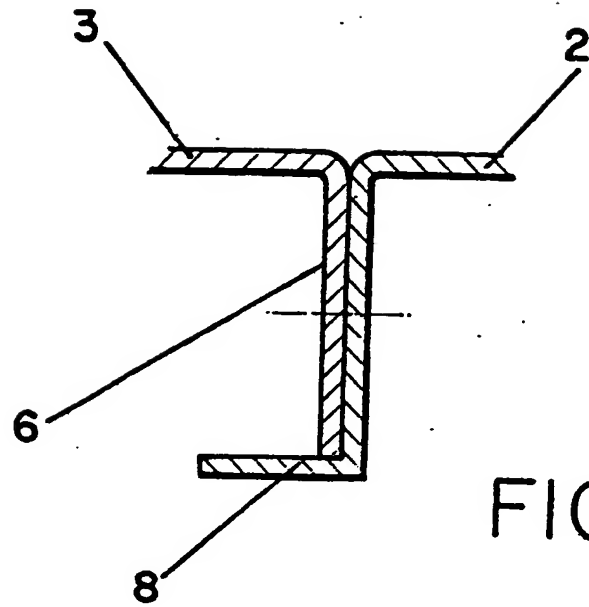


FIG.-1



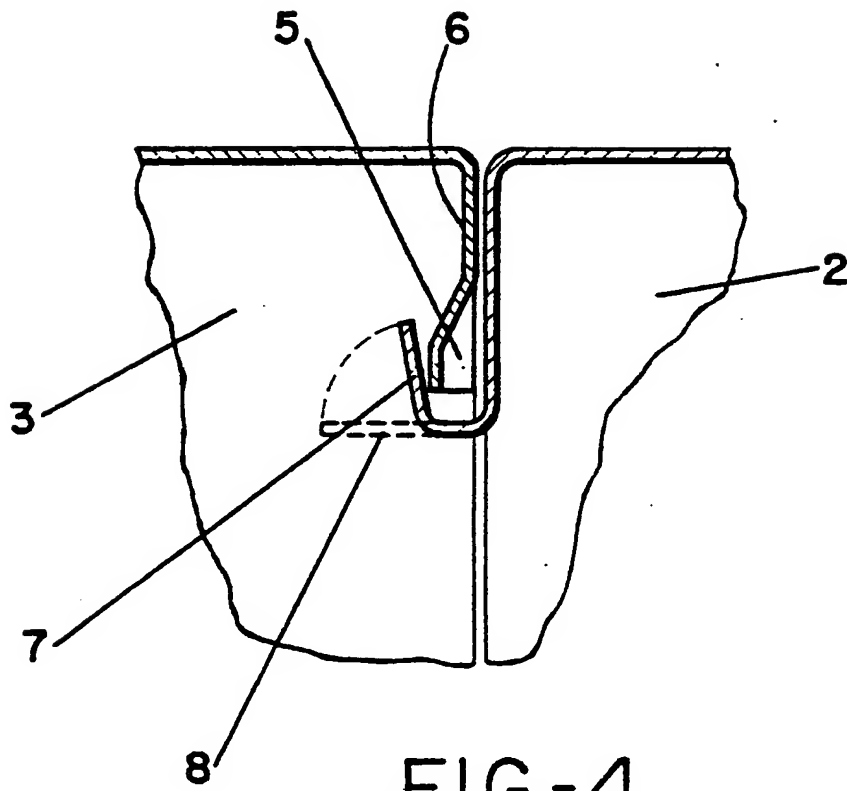


FIG.-4

2090338

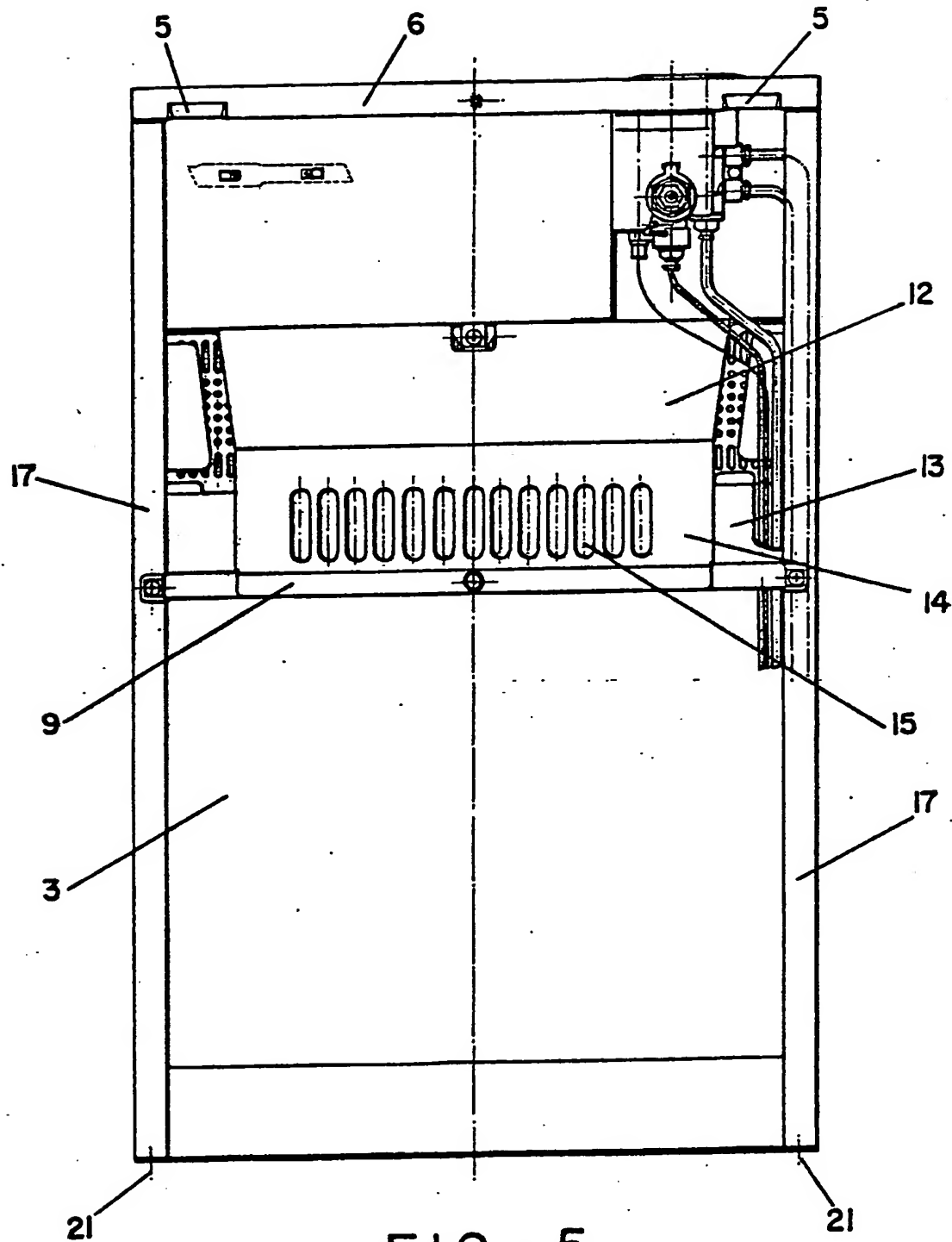


FIG. - 5



FIG.-6

FIG.-8

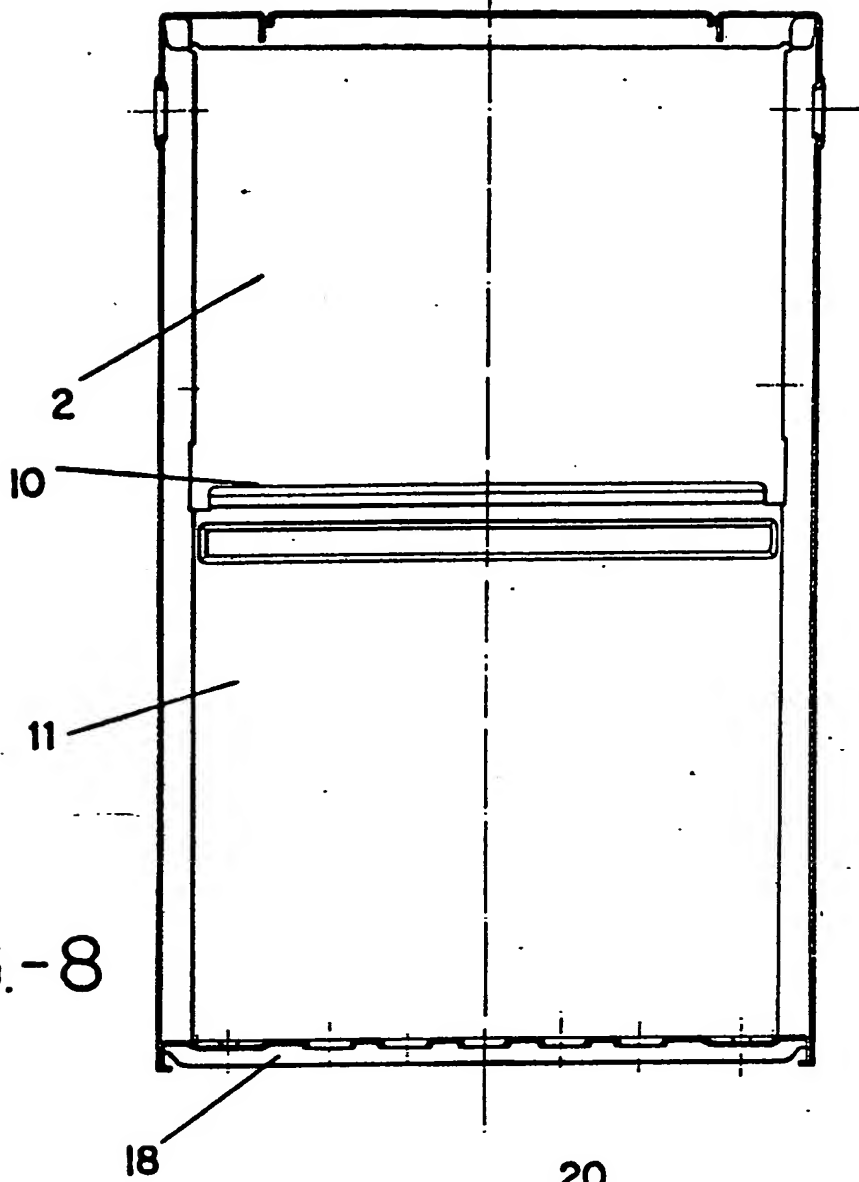
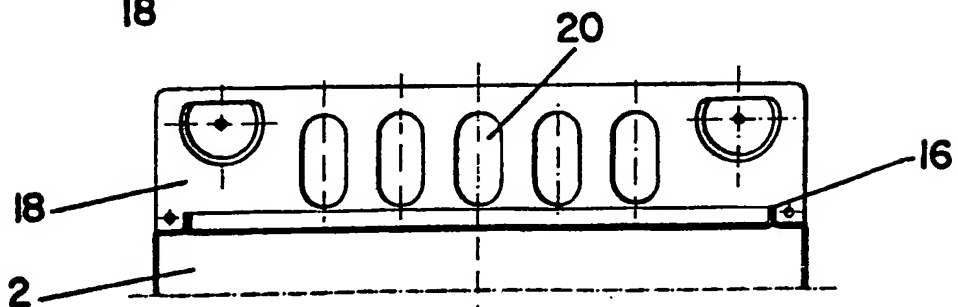


FIG.-9



2090398

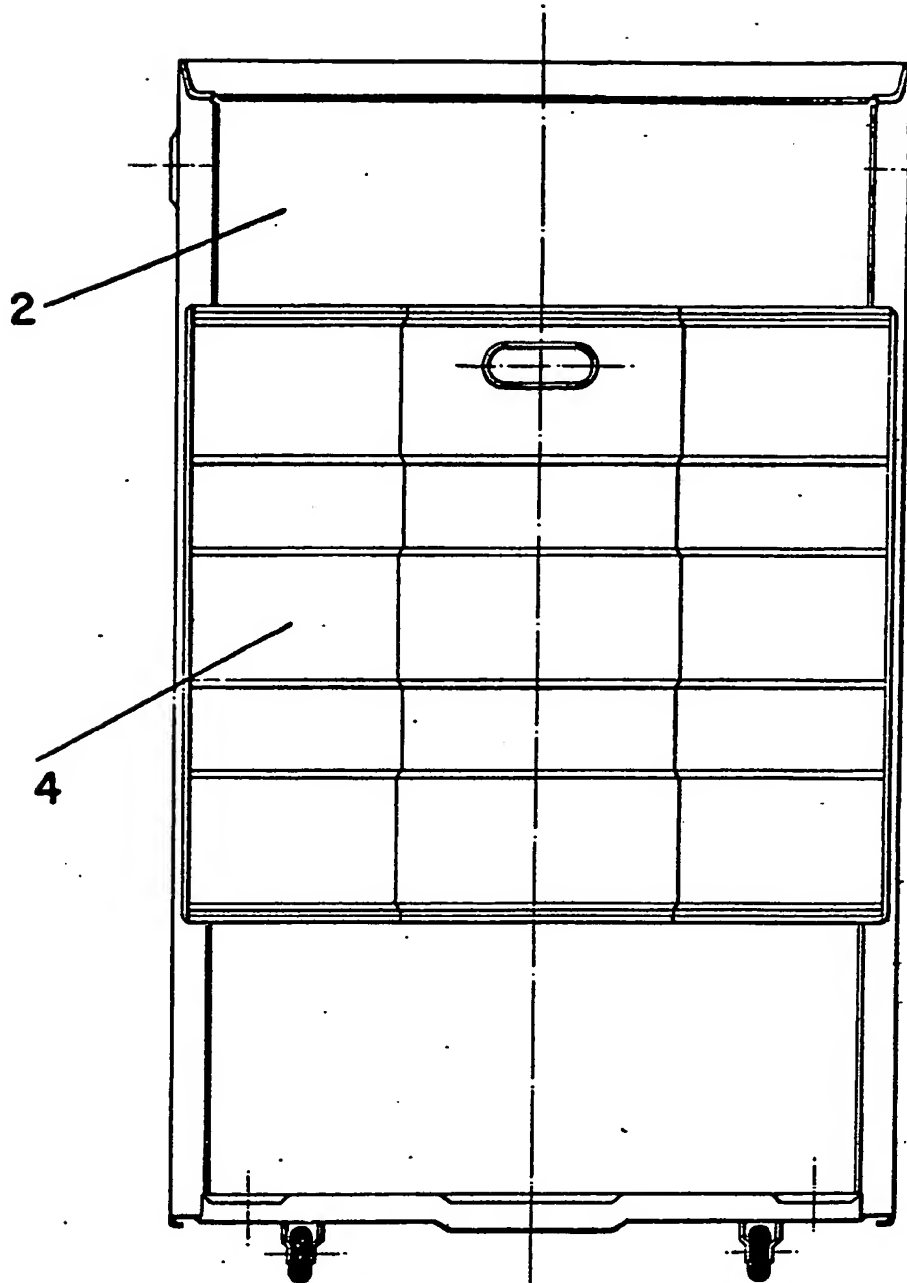


FIG.-10

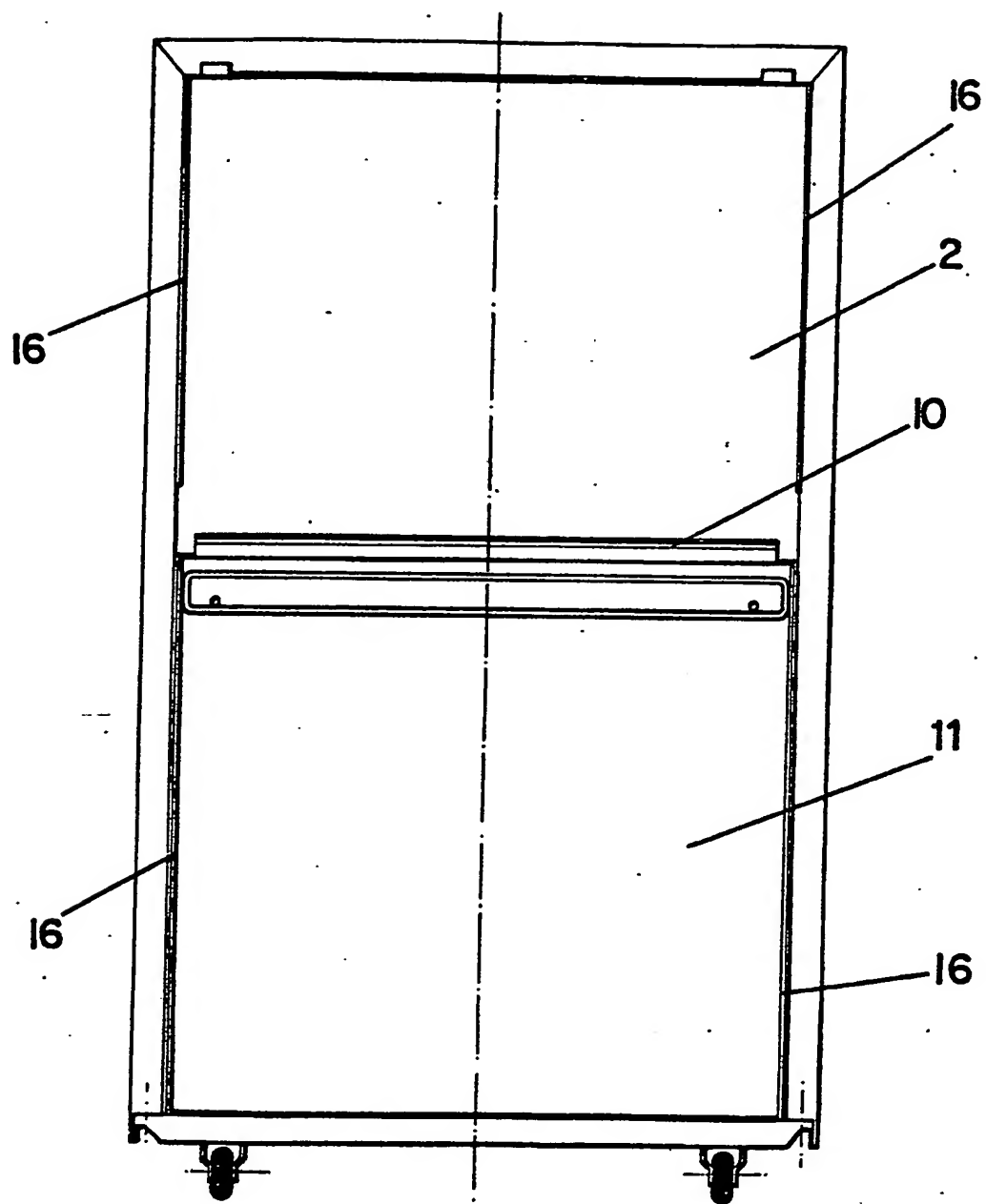


FIG.-11

SPECIFICATION

Domestic gas heater

5 The present invention, as stated in this specification refers to a home butane-gas heater.

The heater herein proposed consists, in fact, of a rolling cabinet composed of two bodies, each one defining an independent hollow space, the posterior one is destined to house the gas bottle containing the fuel, and the one in front that holds the burners, screen and other controlling elements.

Starting from this general description of a butane-gas heater, the present invention specifically aims at a simplification of the construction of the body in order to considerably lower the cost, at the same time not only maintaining the efficiency of the heater, but actually increasing said efficiency to a considerably extent.

20 One of the important objectives aimed at here is to carry out the coupling of said two constituting bodies of the rolling cabinet by such means that enable said coupling to be carried out quickly and easily without using any additional fastening elements as is customary at present.

Still another objective of the present invention is to include in the general structure of the heater or rolling cabinet a series of openings strategically distributed, through which a constant circulation of 30 air is created inside the cabinet, with the specific purpose of feeding the burners, and, very important, cooling the space occupied by the gas fuel bottle.

The first objective, that is to say, all that relates to the coupling system for the bodies constituting the rolling cabinet, is attained by creating in the front body, during the construction phase thereof, a series of flanges of the hook-and-eye type, that is to say, they fit into corresponding flanges that belong in the posterior body. This hook-and-eye or mutual fitting- 40 in system between flanges belonging to one and the other part, result in a fastening between bodies both vertically and horizontally. The original structuring of said flanges and the studied disposition thereof make it possible that by facing the front body with 45 the posterior one and causing a sliding upward movement, said bodies remain perfectly coupled to each other.

It has only been provided as complementary fastening means for both bodies, the application of a couple of screws that relate the front body to the plate that constitutes the back surface of the cabinet.

In order to clearly describe the characteristics of both the system of flanges mentioned above and the openings intended, as formerly explained, to produce 55 a circulation of air to feed the burners and cool the space containing the gas fuel bottle, a set of drawings has been prepared where the different Figures represent the following:

60 *Figure 1* represents a sectional elevation of the home butane-gas heater that constitutes the object of the present invention.

Figure 2 shows a detail in cross section in a large scale of the zone enclosed in a circle in *Figure 1*.

65 *Figure 3* consists, as well, in an enlarged detail of the zone marked by the corresponding circle in

Figure 1.

70 *Figure 4* represents an enlarged detail in cross-section of one of the upper connection points between the two bodies conforming the rolling cabinet or heater itself.

Figure 5 is a rear elevation of the body of the heater having the burners, screens, etc.

75 *Figure 6* is a sectional elevation of the rear body of the heater where the corresponding gas fuel bottle is housed.

Figure 7 is an enlarged detail in cross-section, of the zone marked with a circle in *Figure 6*.

80 *Figure 8* is an elevation showing the rear part of the body of the heater intended to contain the gas fuel bottle.

Figure 9 is a partial plan view of what *Figures 6* and *8* illustrate.

85 *Figure 10* is a rear elevation of the body of the heater related to the door closing the space containing the gas fuel bottle.

Figure 11, finally, is an elevation of the rear body showing the front surface intended to couple with the front body.

According to what has been said, as can be 90 observed, the home butane-gas heater to which the present specification refers, consists of a rolling cabinet referred to in general with (1) conformed by two bodies (2 and 3) that define two contiguous spaces. The posterior space (2) is destined to contain the gas fuel bottle, which is not represented, that 95 remains partially covered with the door (4). The front space (3) conforms the space housing the burners, screens, and the rest of the elements to control the heater.

100 The front body (3) couples with the posterior body (2) by means of a set of fins that keep a male-female relationship that fit into each other in order to achieve a fastening of the parts that will be stable both vertically and horizontally.

105 Both fastenings are achieved simultaneously. In order to achieve the vertical fastening, some embedded areas (5) have been provided in the front body (3) (see *Figures 4* and *5*) which have been made at the extreme zones of a skirt (6) that runs vertically along the upper edge. Said embedded areas (5) 110 determining the above mentioned fins that are oriented towards the inside of said body (3), are combined with the fins (7) of the posterior body (2). The fins (7) are obtained by the upward folding of parts of the flange (8) that runs horizontally near the upper edge of this body (2). In the detail of *Figure 2* the fastening between said skirt (6) and the horizontal flange (8) is shown at the zone where neither part is affected by the embedded areas (5) and foldings 120 (7).

This fastening obtained by fitting-in that takes place in the upper part of the embodiment is complemented by another fastening located at approximately the intermediate part of both bodies.

125 This new fastening is achieved by means of an elongated fin (9) that belongs to the front body (3) and another fin (10) in which the upper edge of a plate or screen (11) is prolonged and that, related to the posterior body (2) establishes the separation or 130 isolation between the burners area and the bottle

containing the gas fuel.

Said fin (9) of the front body (3) is obtained by means of prolonging the lower edges of the two plates (12 and 13) related transversally and exclusively to the internal face of this front body.

As Figure 1 shows, said two plates (12 and 13) are placed facing each other on the same vertical plane and obliquely, with different planes of inclination of said plates, the one indicated by (12) runs in part according to a vertical portion (14) that is located in a coplane with regard to the above mentioned plate or screen (11) of the posterior body (2). The vertical plane (14) of the plate (12) has various openings (15).

In order to attain the horizontal fastening between the two bodies (2 and 3), so that once coupled with each other there will not be any lateral sliding motion of one with regard to the other, some vertical flanges (16) have been provided on the posterior body (2), and said flanges fit in the internal edges of the flanges (17) that run vertically at both sides of the front body (3).

In virtue of the characteristics and disposition of the whole set of flanges and fins thus far described, intended to couple both bodies (2 and 3) and give definitive shape to the rolling cabinet that conforms the heater itself, the first operation is facing the front body (3) and the posterior one (2) so that the upper fins (5) and the intermediate one (9) belonging to said body will be left oriented to the holes provided in the fins (7 and 10) of the posterior body (2). Letting the posterior body (3) drop smoothly, the fitting-in of the fins, as shown in Figures 2, 3 and 4 is produced, causing in this way the vertical fastening of both bodies.

As stated above, said vertical fastening causes at the same time the horizontal fastening. Well, that is so as long as the front body in facing the rear one, makes the edges or vertical fins (16) of the rear body (2) fit in between the internal edges of the flanges (17) that run along both sides of the front body (3). Said fitting, as stated before, prevents one of the bodies from sliding laterally with respect to the other one.

Although with said operations the coupling of parts is rigid and stable, the two new complementary points of locking have been provided besides the ones already described. Said two new complementary points consist in screws (21), see Figure 1, that affix the lower part of the front body (3) to the plate (18) that on the whole conforms the rear surface of the cabinet, that is to say, the plate (18) has a surface equivalent to the sum of the two lower bases of the bodies conforming the cabinet.

In order to have inside the cabinet a circulation of air enough to feed the burners and also to cool the space containing the gas fuel bottle, some openings (19 and 20) have been provided in the back surface (18) that open to the outside both the space containing the gas bottle and the area having the burners and other elements located in the front body (3).

Finally, it must be remarked that in order to make the cooling of the space containing the fuel bottle even more effective, a number of holes (22) have been provided at front, plus a couple of brims (23) that are especially intended to isolate said tap from

the heat inevitably dimanating from the heating screens.

CLAIMS

70

1. Home butane gas heater, that while being of the type usually constituted by a rolling cabinet, built on the basis of two bodies defining two contiguous spaces, the rear one destined to house the bottle containing the gas fuel, and the front one to carry the corresponding burners, screens and other controlling elements; is essentially characterized in that the front body is coupled to the one containing the gas bottle by means of fins provided in the former, that being in a male-female relationship fit into other flanges belonging to the rear body, and said fitting-in determining a locking of bodies both vertically and horizontally; at least two other locking points have been provided by means of screws, for the front body with respect to the plate constituting the back surface of said cabinet; with the particular feature that the screen that separates or isolates the burners from the gas fuel bottle consists in a plate that, related frontally to the rear body, closes at least the lower half of the total height thereof; there existing in the embodiment a series of openings through which a constant circulation of air is created inside the cabinet in order to feed the burners and cool the space occupied by the gas fuel bottle.

2. Home butane gas heater according to claim 1 above, characterized in that in order to achieve the vertical fastening, the fins of the front body consist in embedding zones of a skirt that runs vertically along the upper edge, and the fins of the rear body, fitting in the fins mentioned above, consist in upward foldings of portions of a flange running horizontally in the vicinity of the upper edge of said rear body; besides, in order to attain said vertical fastening, the front body has been provided at approximately the intermediate part, with an elongated fin placed transversally that fits into another flange that results from the prolonged part of the upper edge of the plate or screen that separates the gas fuel bottle from the burners.

3. Home butane gas heater, according to claim 2 above, characterized in that the fin of the front body that fits into the fin of the plate or screen, is the result of the prolonged vertical part of the lower edges of two plates related transversally and exclusively to the internal part of said front body, said two plates facing each other within the same vertical plane and enclosed in corresponding inclined planes, having the particular feature that the upper one of said plates presents a vertical portion that is placed alongside to said plate or screen.

4. Home butane gas heater, according to claims 1 and 2 above, characterized in that the upper horizontal flange of the rear body is prolonged at the vertical edges in order to couple between flanges that run the also vertical edges of the front body, said coupling determining the fastening of both bodies in the horizontal sense.

5. Home butane gas heater, according to claim 1, characterized in that the openings provided in order to ensure a circulation of air inside the cabinet are

130

located on the back plate, on one and the other side of the plate or screen, as well as on the vertical portion of the plate that is located alongside with said screen.

Printed for Her Majesty's Stationery Office, by Croydon Printing Company Limited, Croydon, Surrey, 1982.
Published by The Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.